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INDICATORS FOR THE EVALUATION OF HIGHER EDUCATION INSTITUTIONS: A BIBLIOGRAPHIC REVIEW

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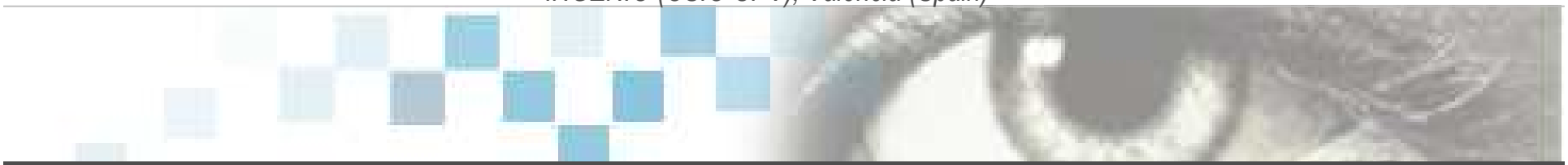

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Index

- → Motivation
- → Objectives
- → Methodology
- → Adopted Classification
- → Results: Bibliographic Review of Indicators
- → Conclusions

Motivation (i)

→ HEI around the world are undergoing important changes

→ Universities are developing new roles and missions (teaching, research and knowledge transfer)

→ HEI are carrying out processes of cost and rationalization

→ Decrease in public R&D development

→ Increase in private funding

→ HEI will become increasingly significant economic actors

→ Respond to the demands of the market

→ Develop partnerships that harness scientific & technological knowledge

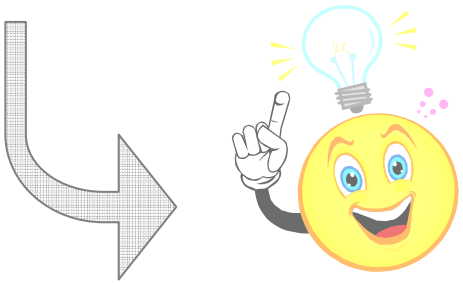
→Production, exploitation & diffusion of knowledge = economic growth

Motivation (ii)

→ **Governments and HE agencies are implementing strategies to analyze HEI performance.**

→ **HE evaluation = complex process that requires previously agreed reliable and appropriate standards.**

→ **There has been an upsurge in studies on the evaluation of universities using different indicators systems.**



Objectives

→ To Systematize the existing indicators:

→ For facilitating the establishment of criteria for decision making and classification of the factors related to evaluation.

Methodology

→ Comparative Method.

→ Systematic search procedure of data to establish generalizations.

Adopted Classification

→ **There have been many indicator systems proposed and opinion differs about what is the most appropriate.**

→ **Classification proposed at the Spanish Council of Universities**

(Consejo de Universidades, 1999)

- **Purpose of the evaluation**:

  (a) Institutional versus program

  (b) Inputs, processes and output

  (c) Quality, equity, effectiveness, efficiency and efficacy

  (d) Teaching, research and management

  (e) Third mission activities

Results: Bibliographic Review of Indicators

a) Institutional versus program

		Mission, Organization	Admission Policy	Teaching *Inputs*	Research *Inputs*	Teaching *Outputs*	Research *Outputs*	Third Mission	Services to students	Programs
Institutions	**INES**, 2008	**X**	X	**X**	-	**X**	-	-	-	-
	ENQA, 2009	**X**	-	**X**	-	**X**	-	-	X	**X**
	PRIME, 2007	**X**	-	**X**	**X**	X	X	X	X	**-**
	CIHE, 2007	**X**	X	**X**	**X**	-	-	-	X	**X**
	SACS, 2008	**X**	X	**X**	**X**	**X**	-	-	X	**X**
	QAA, 2006	X	X	X	**-**	**X**	-	-	X	X
	HEFCE, 2008	-	-	-	**-**	**X**	X	X	-	-
	García-Aracil & Villarreal, 2009	**X**	-	**X**	**X**	**X**	X	X	-	-
	AQU, 2007	**X**	X	**X**	**X**	**X**	-	-	-	X

		Mission, Organization	Admission Policy	Teaching *Inputs*	Research *Inputs*	Teaching *Outputs*	Research *Outputs*	Third Mission	Services to students	Institution
Programs	**UNESCO**, 2004	**X**	X	**X**	X	**X**	X	-	-	**X**
	CHEA, 2006	-	-	-	-	**X**	X	-	-	-
	USDE, 2006	**X**	X	**X**	-	**X**	-	-	X	-
	ABET, 2006	**X**	X	**X**	-	**X**	-	-	X	**X**
	ANECA, 2007	**X**	X	**X**	-	-	-	-	-	-
	Guerra, 1999	-	-	**X**	X	**X**	X	-	-	-

Results: Bibliographic Review of Indicators

b) Inputs, processes and output

	Inputs			Processes		Outputs		
	Human resources	Economics	Infrastructures	Generals	Socials	Academics	Research	Third Mission
CESC, 2005	X	X	-	-	**X**	X	-	-
AUCC, 2003	X	X	-	-	**X**	X	**X**	**X**
UNESCO (Australia), 2003	X	X	-	X	-	X	-	-
UNESCO (German), 2003	X	X	**X**	X	**X**	X	-	**X**
PNECU, 2002	X	X	**X**	X	-	X	**X**	**X**
Universidad de Oviedo, 1999	X	-	-	X	-	X	-	**X**

Results: Bibliographic Review of Indicators

c) Quality, equity, effectiveness, efficiency and efficacy

	Quality	Equity	Effectiveness	Efficiency	Efficacy
PCFC Macro Performance Indicators (UK), 1990	X	X	**X**	X	-
Universidad de Maastricht, Jumady & Ris, 2005	**X**	**X**	**X**	X	-
UCM, Pablos Escobar y Gil Izquierdo, 2004	X	X	-	-	**X**

d) Teaching, research and management

	Teaching				Research		Management		
	Subjects	Resources	Results	Teaching Methodology	Resources	Production, diffusion	Admission	Human resources	Documentation
CNE, France, 2003	**X**	**X**	-	-	-	**X**	**X**	**X**	X
Univ. of Seville, 1999	**X**	**X**	X	**X**	X	X	X	**X**	X
Univ. of Burgos, 1999	**X**	**X**	X	-	X	X	-	**X**	-

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Results: Bibliographic Review of Indicators

e) Third mission activities

	Inputs						Outputs				
	Personal		Economics				Commercial Transactions			Circulation	
	General	Category	Internal Expedit.	Source	External Expendit.	Total	Patents licenses	Turnover	Market share	Technology	Publications
Frascati MI, 2002	**X**	X	X	X	X	X	**-**	**-**	**-**	**-**	**-**
TBP Manual, 1990	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**	-	X	-
Oslo M, 2005	-	-	**X**	**X**	-	-	-	**X**	**X**	-	-
Patent M, 1994	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**	-	-	X
EC, 2003	**X**	-	-	X	-	-	X	**X**	**X**	-	**X**
HLC, 2003	**-**	-	-	X	-	-	X	**X**	**X**	-	**-**
SPRU, 2002	**-**	-	-	X	-	-	X	**X**	**X**	-	**-**
ProTon, 2007	**X**	X	-	X	-	X	X	**X**	**X**	-	**-**
TTO, 2006	**X**	X	-	X	-	X	X	**X**	**X**	-	**-**

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Conclusions

→Indicators are essential tools for understanding and evaluating HEI.

→ The bibliographic review demonstrates the complexity involved in analyzing the indicator systems proposed

→ Variability of proposals:

- The borders between some of the proposals are not clearly defined
- Differences in terms of the categories used to define indicators
- Endogeneity problem

→ Characterization of indicators:

- Should they be quantitative or qualitative?
- Should data analysis be descriptive, inferential or multivariable?

Difficult to establish criteria to classify the existing indicators

THANK YOU VERY MUCH FOR YOUR ATTENTION!

SUGGESTIONS AND COMMENTS ARE WELCOME !

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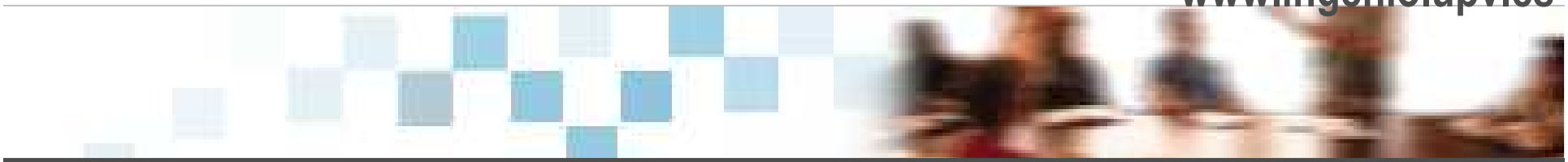

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